



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,416	09/30/2003	Jui -Mei Hsu	CMOP0024USA	2415
27765	7590	08/09/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			NGUYEN, THANH NHAN P	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/605,416	Applicant(s) HSU, JUI-MEI	
	Examiner (Nancy) Thanh-Nhan P. Nguyen	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amended dated 5/2/2005.
2. New claims 16-29 are added. Claims 1-29 are pending for the examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-4, and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Wachi (U.S. 6,819,375).

Referring to claim 1, Wachi discloses a liquid crystal display comprising a lower substrate (20); an upper substrate (10) positioned parallel with the lower substrate; and a plurality of pixel units, each of the pixel units including an upper transparent electrode (11), a liquid crystal layer (40), a lower transparent electrode (24), and a color filter (23) covered with one of the upper and lower transparent electrode directly; wherein a surface of each color filter has a plurality of recess structures, [figs. 1-3].

Referring to claims 3-4, Wachi discloses each of the pixel units respectively comprises a reflection layer (21) positioned between the color filter and the lower substrate; and the liquid crystal being a reflective liquid crystal display, [fig. 3].

Referring to claims 16-17, Wachi discloses wherein the plurality of recess structures comprises a plurality of valley structures; and wherein the surface of each color filter has the plurality of recess structures is able to scatter light, [fig. 3].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Kim et al (U.S. 2002/0018159).

Referring to claim 2, Wachi lacks disclosure of a distribution density of the recess structures is used to regulate brightness and a color deepness of the liquid crystal display.

It was well known to have a distribution density of the recess structures for regulating brightness and a color deepness of the liquid crystal display, as evidenced by Kim et al, [par. 0059]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have a distribution density of the recess structures for regulating brightness and a color deepness of the liquid crystal display.

Referring to claim 8, Wachi lacks disclosure of wherein each of the color filters includes both a first region and a second region, and a surface of the first region has a plurality of recess structures.

Kim et al discloses wherein each of the color filters includes both a first region and a second region, and a surface of the first region has a plurality of recess structures, [see paragraph 0046; fig. 4A, 4B], for the benefit of improving characteristics in color and brightness, [par. 0003]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have wherein each of the color filters includes both a first region and a second region, and a surface of the first region has a plurality of recess structures for the benefit of improving characteristics in color and brightness.

Claims 9-10 are met the discussion regarding claims 8 and 2 rejection above.

Claims 11-12 are met the discussion regarding claims 8 and 3-4 rejection above.

Claims 5-6, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Matsushita et al (U.S. 6,501,521).

Referring to claims 5-6, Wachi lacks disclosure of each of the reflection layers includes an opening, and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal display.

Matsushita et al discloses each of the reflection layers includes an opening, and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal

Art Unit: 2871

display, [see fig. 8], for the benefit of improving the visibility, [see col. 11, lines 44-45]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have each of the reflection layers includes an opening for the benefit of improving the visibility.

Claims 26-27 are met the discussion regarding claims 20 and 5-6 rejection.

Claims 7, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Tanaka et al (U.S. 2002/0033912).

Referring to claim 7, Wachi lacks disclosure of the liquid crystal comprising a plurality of thin film transistors for respectively controlling each of the pixel units; (the thin film transistors are formed on the lower substrate).

It was well known to use thin film transistors for controlling the pixel units in the liquid crystal display device, as evidenced by Tanaka et al, [fig. 1]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use thin film transistors for controlling the pixel units.

Claims 28-29 is met the discussion regarding claims 20 and 7 rejection.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Kim et al, and further in view of Matsushita et al.

Referring to claims 13-14, Wachi lacks disclosure of each of the reflection layers includes an opening, and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal display.

Matsushita et al discloses each of the reflection layers includes an opening, and the liquid crystal display being a semi-transmissive and semi-reflective liquid crystal display, [see fig. 8], for the benefit of improving the visibility, [see col. 11, lines 44-45]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have each of the reflection layers includes an opening for the benefit of improving the visibility.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Kim et al, and further in view of Tanaka et al.

Referring to claim 15, Wachi lacks disclosure of the liquid crystal comprising a plurality of thin film transistors for respectively controlling each of the pixel units.

It was well known to use thin film transistors for controlling the pixel units in the liquid crystal display device, as evidenced by Tanaka et al, [fig. 1]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use thin film transistors for controlling the pixel units.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi in view of Kim et al, and further in view of Matsushita et al.

Referring to claims 18-19, Wachi lacks disclosure of wherein the plurality of recess structures comprises a plurality of valley structure; and the surface of the first region has the plurality of recess structures is able to scatter light.

It was conventional at the time to have the plurality of recess structures comprises a plurality of valley structure, and the surface of the plurality of recess structures is able to scatter light, and therefore had the benefits associated with being conventional, such as the benefit of being available and the benefit of being suitable for the intended purpose, as evidenced by Matsushita et al, [fig. 8]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the plurality of recess structures comprises a plurality of valley structure, and the surface of the plurality of recess structures is able to scatter light for the benefit of being available and the benefit of being suitable for the intended purpose.

Claims 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi.

Referring to claims 20-21, Wachi discloses a liquid crystal display comprising a lower substrate (20); an upper substrate (10) positioned parallel with the lower substrate; and a plurality of pixel units, each of the pixel units including an upper transparent electrode (11), a liquid crystal layer (40), a lower transparent electrode (24), and a color filter (23) covered with one of the upper and lower transparent electrode directly; wherein a surface of each color filter has a plurality of convex structures, [figs. 1-3].

Even though Wachi lacks disclosure of a color filter formed on the upper substrate, it has been determined that the arrangement of parts is within the ordinary level of skill, [MPEP 2144.04 VI (C) Rearrangement of Parts]. Further, rearranging color

Art Unit: 2871

filter from lower substrate to upper substrate will not change the function of color filter, and therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to form a color filter on the upper substrate for having an intended use (the use of color filter).

Referring to claim 22, Wachi discloses wherein the surface of each color filter has the plurality of convex structure is able to scatter light, [fig. 3].

Claim 23 is met the discussion regarding claims 20 and 2 rejection above.

Claims 24-25 are met the discussion regarding claims 20 and 3-4 rejection above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Wachi (U.S. 6,819,375).

Kim et al (U.S. 2002/0018159).

Matsushita et al (U.S. 6,501,521).


Tanaka et al (U.S. 2002/0033912).

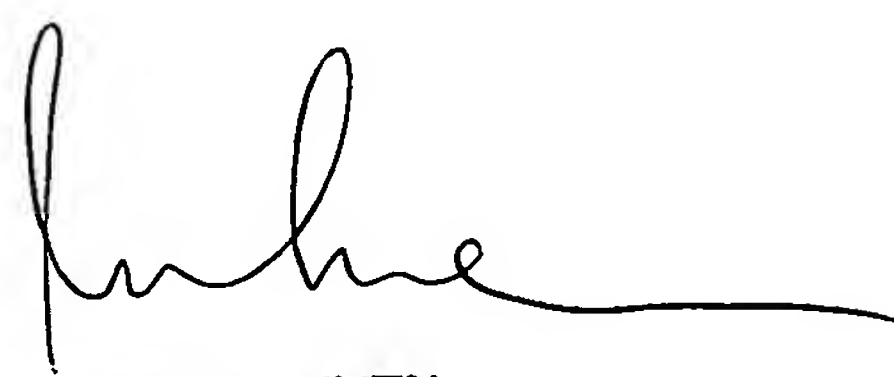
Art Unit: 2871

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on M-F/9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871
-- August 5, 2005 -- 


DUNG T. NGUYEN
PRIMARY EXAMINER